**Secondary Ion Mass Spectrometer SIMS**

**Equipment: SIMS Atomika ADIDA 3000**

**No. of Equipment: UJEP4**

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**Equipment Description**

**Description of equipment:**

Analytical equipment for surface analysis. - Secondary Ion Mass Spectrometer

Equipped with two sources of ions. Cs ion gun and O2 ion gun (possible to switch to Ar)

Specifications and technical features:

Cs primary beam:

ion energy: 3keV – 15 keV

maximum ion current: 400 nA (at 15 keV), 20 nA (at 3 keV)

maximum current density: 30 mA/cm2 (15 keV)

minimal spot diameter: 30 µm (at 15 keV)

O2 or Ar primary beam

ion energy: 3keV – 15 keV

maximum ion current: 2 µA

minimal spot diameter: 15 µm

Vacuum system

analysis chamber pressure: 10-9 Torr

loading chamber pressure: 10-7 Torr

Quadrupole mass spectrometer

maximum detectable mass: higher than 350 amu (positive or negative ions)

**Specification of expertise relevant to NanoEnviCz workpackages:**

**WP4**a,c **WP6**a,b,d-f, **WP7**a,b,c

**Detailed description of expertise**

**Please, specify the main research topics connected with equipment**:

**Analysis of thin films**

Wide range of materials in solid state is possible to analyse. Metals, metal oxides, nitrides, … The SIMS gives chemical composition of the sample. Possible to resolve isotopes. The method was developed for detection of dopants in Si for Si industry.

**Keywords describing research area:**

Analysis of thin films

**Competence**

**Relevance for applied and industrial research:**

Sensitive analysis of thin film chemical composition, not very often accesible.

**Relevance for fundamental studies:**

Analysis of new materials